

**LEMBAR**  
**HASH PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW**  
**KARYA ILMIAH: JURNAL ILMIAH**

Judul Karya Ilmiah (Artikel) : Vitamin C encapsulation by a gelation method using deacetylated glucomannan as a matrix  
 Jumlah Penulis : 8 orang  
 Status Pengusul : **Penulis pertama/ penulis ke-3/ penulis korespondensi**  
 Identitas Jurnal ilmiah : a. Nama Jurnal : Journal of King Saud University - Science  
 b. Nomor ISSN : ISSN: 1018-3647  
 c. Volume, nomor, bulan, tahun : Vol. 32, 7, pp. 2924-2930, 2020  
 d. Penerbit : King Saud University  
 e. DOI Artikel : 10.1016/j.jksus.2020.07.010  
 f. AlamatWeb  
 JURNAL : <https://www.sciencedirect.com/journal/journal-of-king-saud-university-science/vol/32/issue/7>  
 ARTIKEL : <https://www.sciencedirect.com/science/article/pii/S1018364720302202>  
 g. Terindeks : Scopus/Sdmagojr/SJR=0,463 (2019) dan Q1

Kategori Publikasi Jurnal Ilmiah (Beri v pada kategori yang tepat)  
 Hasil Penilaian Peer Review :

Jurnal Ilmiah Internasional  
 Jurnal Ilmiah Nasional Terakreditasi  
 Jurnal Ilmiah Nasional Tidak Terakreditasi

Komponen yang dinilai	Nilai Reviewer		Nilai rata-rata
	Reviewer 1	Reviewer 2	
a. Ketengkan unsur isi Artikel (10%)	3,2	3,75	3,475
b. Ruang lingkup dan kedalaman pembahasan (30%)	10,4	11,5	10,95
c. Kecukupan dan kemitakhiran data/ informasi dan metodologi (30%)	11,6	12	11,8
d. Kelengkapan unsur dan kualitas terbitan/ jumul (30%)	10,8	11,5	11,15
Total = (100%)	36	38,75	37,375
<b>Nilai Pengusul (kontribusi pengusul sebagai penulis pertama) = (60% x 37,375)</b>			<b>22,425</b>

Semarang, 1 Februari 2021

Reviewer II



Prof. Dr. Andri Cahyo Kumoro, ST, MT  
 NIP. 19740523199802 1 001  
 Unit Kerja : Departemen Teknik Kimia FT UNDIP

Reviewer I



Prof. Dr. Ir. Bambang Pramudono, M.S.  
 NIP. 195203121975011004  
 Unit Kerja : Departemen Teknik Kimia FT UNDIP

**LEMBAR  
HASH PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW  
KARYAILMIAH: JURNALILMIAH**

Judul Karya Ilmiah (Artikel) : Vitamin C encapsulation by a gelation method using deacetylated glucomannan as a matrix  
 Jumlah Penulis : 8 orang  
 Status Pengusul : Penulis pertama/ penulis ke-3/ penulis korespondensi  
 Identitas Jurnal Ilmiah :  
 a. Nama Jurnal : Journal of King Saud University - Science  
 b. Nomor ISSN : ISSN: 1018-3647  
 c. Volume, nomor, bulan, tahun : Vol. 32, 7, pp. 2924-2930, 2020  
 d. Penerbit : King Saud University  
 e. DOI Artikel : 10.1016/j.jksus.2020.07.010  
 f. Alamat Web :  
 JURNAL : <https://www.sciencedirect.com/journal/journal-of-king-saud-university-science/vol/32/issue/7>  
 ARTIKEL : <https://www.sciencedirect.com/science/article/pii/S1018364720302202>  
 g. Terindeks : Scopus/Sdmagojr/SJR=0,463 (2019) dan Q1

Kategori Publikasi Jurnal Ilmiah (Beri V pada kategori yang tepat)

Jurnal Ilmiah Internasional  
 Jurnal Ilmiah Nasional Terakreditasi  
 Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian Peer Review :

Komponen yang dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir yang diperoleh
	Internasional	Nasional Terakreditasi	Nasional Tidak Terakreditasi	
	40	<input type="text"/>	<input type="text"/>	
a. Kelengkapan unsur isi Artikel (10%)	4			3.2
b. Ruang lingkup dan kedaiaman pembahasan (30%)	12			10.4
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	12			11.6
d. Kelengkapan unsur dan kualitas terbitan/ jumul (30%)	12			10.8
<b>Total = (100%)</b>	<b>40</b>			<b>36</b>
<b>Nilai pengusul = 60 % x 36</b>				<b>21.6</b>

**Catatan penilaian artikel oleh Reviewer**

**1. Kesesuaian dan kelengkapan unsur isi iumal:**  
 Kelengkapan unsur artikel cukup baik ( nilai 8 %)

**2. Ruang lingkup dan kedaiaman pembahasan:**  
 Kajian artikel ini adalah meneliti derajad deacetilasi pada proses enkapsulasi vitamin C. Tinjauan hanya mencakup tentang loading capacity, releasing vitamin C, dan karakterisasinya. Pembahasan pada umumnya membandingkan dengan hasil para peneliti sebelumnya, ditunjukkan adanya 19 sitasi (sekitar 51,3 %) dari 37 daftar pustaka. Namun hanya sedikit yg membahas sampai ke scientific background nya. (nilai 26 %)

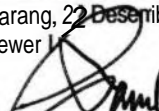
**3. Kecukupan dan kemutakhiran data/informasi dan metodologi:**  
 - Metode penelitian dituliskan cukup jelas. Kemutakhiran, referensi 10 tahun terakhir dari jurnal, prosiding, atau buku sebanyak 31 dari 37 daftar pustaka, atau 83,8%. (nilai 29 %)

**4. Kelengkapan unsur dan kualitas terbitan/jumul:**  
 Jurnal ini terindex di Scopus, dengan SJR = 0,463. Editorial board dari berbagai negara, terdapat pedoman penulisan (guide for authors), format penulisan konsisten. Artikel yang disajikan penulis dari berbagai negara. Penerbit jurnal ini adalah King Saud University. ISSN : 1018-3647. Jurnal ini dapat digolongkan jumul internasional bereputasi. (nilai 27 %)

**Catatan:**

- Penulisan daftar pustaka kurang konsisten
- Proses editing / penyuntingan kurang baik.

Semarang, 22 Desember 2020  
 Reviewer

  
 Prof. Dr. Ir. Bambang Pramudono, M.S.  
 NIP 195203121975011004  
 Unit Kerja : Departemen Teknik Kimia FT UNDIP

**LEMBAR**  
**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW**  
**KARYA ILMIAH: JURNAL ILMIAH**

Judul Karya Ilmiah (Artikel) : Vitamin C encapsulation by a gelation method using deacetylated glucomannan as a matrix  
 Jumlah Penulis : 8 orang  
 Status Pengusul : Penulis pertama/ penulis ke-3/ penulis korespondensi  
 Identitas Jurnal Ilmiah : a. Nama Jurnal : Journal of King Saud University - Science  
 b. Nomor ISSN : ISSN: 1018-3647  
 c. Volume, nomor, bulan, tahun : Vol. 32, 7, pp. 2924-2930, 2020  
 d. Penerbit : King Saud University  
 e. DOI Artikel : 10.1016/j.jksus.2020.07.010  
 f. Alamat Web :  
 JURNAL : <https://www.sciencedirect.com/journal/journal-of-king-saud-university-science/vol/32/issue/7>  
 ARTIKEL : <https://www.sciencedirect.com/science/article/pii/S1018364720302202>  
 g. Terindeks : Scopus/Scimagojr/SJR=0,463 (2019) dan Q1

Kategori Publikasi Jurnal Ilmiah (Beri ✓ pada kategori yang tepat)

<input checked="" type="checkbox"/>	Jurnal Ilmiah Internasional
<input type="checkbox"/>	Jurnal Ilmiah Nasional Terakreditasi
<input type="checkbox"/>	Jurnal Ilmiah Nasional Tidak Terakreditasi

Hasil Penilaian *Peer Review* :

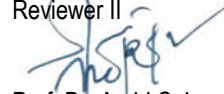
Komponen yang dinilai	Nilai Maksimal Jurnal Ilmiah			Nilai Akhir yang diperoleh
	Internasional	Nasional Terakreditasi	Nasional Tidak Terakreditasi	
	40	<input type="text"/>	<input type="text"/>	
a. Kelengkapan unsur isi Artikel (10%)	4			3,75
b. Ruang lingkup dan kedalaman pembahasan (30%)	12			11,50
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	12			12,00
d. Kelengkapan unsur dan kualitas terbitan/ jurnal (30%)	12			11,50
<b>Total = (100%)</b>	<b>40</b>			<b>38,75</b>
<b>Nilai pengusul = 60 % x 38,75</b>				<b>23,25</b>

**Catatan penilaian artikel oleh Reviewer:**

- Kesesuaian dan kelengkapan unsur isi jurnal:** Artikel ini mempunyai unsur yang lengkap yang terdiri dari judul, pendahuluan, bahan dan metode percobaan, hasil dan pembahasan, kesimpulan, ucapan terima kasih dan daftar putaka serta beberapa pernyataan tentang "conflict of interest". Tidak ada abstrak dan kata kunci
- Ruang lingkup dan kedalaman pembahasan:** Isi artikel meliputi kajian percobaan deasetilasi glukomanan, enkapsulasi vitamin C dengan glukomanan terasetilasi secara gelasi dan penerapan model matematika untuk menggambarkan pelucutan vitamin C dari matriks enkapsulan. Isi artikel masih dalam ruang lingkup **Journal of King Saud University – Science**. Tujuan percobaan disebutkan dengan jelas pada bagian akhir pendahuluan. Hasil percobaan disajikan dengan baik dan dibahas dengan ringkas, dibandingkan dengan hasil penelitian oleh peneliti terdahulu dan didukung dengan pustaka yang relevan dan mutakhir. Terdapat 19 (51,35%) pustaka yang digunakan dalam pembahasan. Pembahasannya cukup baik walaupun kurang mendalam secara teoritik dan disertai beberapa self-citation.
- Kecukupan dan kemutakhiran data/informasi dan metodologi:** Metodologi percobaan dituliskan dengan cukup lengkap dan merujuk pada pustaka yang relevan. Artikel ini menyajikan cukup banyak data percobaan yang disajikan dalam bentuk tabel dan gambar. Artikel ini didukung oleh 37 pustaka dan 23 di antaranya bersifat mutakhir (62,16%) dan 4 (10,81%) di antaranya adalah karya penulis (**self-citation**).
- Kelengkapan unsur dan kualitas terbitan/jurnal:** **Journal of King Saud University – Science** ini tergolong sudah lama didirikan dan merupakan **jurnal internasional bereputasi** karena terindeks **Scopus** kategori **Q1** untuk bidang Sains secara umum dengan **SJR 0,463** dan **H index 32** pada tahun 2019. Jurnal ini juga terindeks di Science Citation Index Expanded Clarivate Analytics (**IF 3.819**), DOAJ dan lain-lainnya. Anggota Editorial Board berasal dari beberapa negara, terdapat penjelasan mengenai ruang lingkup, pedoman dan format penulisan yang jelas dan konsisten serta kebijakan publikasi. Penerbitan dilakukan dalam 4 issue sepanjang tahun secara berkala. Tampilan tabel pada setiap artikel baik namun ada beberapa hal tidak konsisten seperti penggunaan tulisan tebal. Editor masih kurang jeli dalam menyunting artikel karena pada beberapa artikel terdapat beberapa gambar dan rumus kimia ukurannya sangat kecil, sukar dibaca dan ukurannya tidak baku. Pada umumnya, artikel yang diterbitkan merupakan hasil karya penulis dari berbagai negara. Gaya selingkung yang diterapkan jurnal ini baik dan konsisten, walaupun juga ditemui beberapa artikel yang Bahasa Inggrisnya kurang baik. Penerbit jurnal ini adalah Elsevier B.V. atas nama King Saud University- Kingdom of Saudi Arabia.

Semarang, 16 Desember 2020

Reviewer II



Prof. Dr. Andri Cahyo Kumoro, ST, MT

NIP. 19740523 199802 1 001

Unit Kerja: Departemen Teknik Kimia FT UNDIP



# DOCUMENT DETAILS

< Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More... >

View at Publisher

Journal of King Saud University - Science [Open Access](#)  
Volume 32, Issue 7, October 2020, Pages 2924-2930

## Vitamin C encapsulation by a gelation method using deacetylated glucomannan as a matrix (Article) [\(Open Access\)](#)

[Wardhani, D.H.](#) ✉, Ulya, H.N., Nugroho, F., Widayat ✉, Abdullah ✉, Sasongko, S.B. ✉, Hadiyanto, A. ✉, Nugroho, A. ✉

Chemical Engineering Department, Faculty of Engineering, Universitas Diponegoro, Jl. Prof. Sudarto, SH, Tembalang, Semarang, Indonesia

### Abstract

View references (37)

[No abstract available]

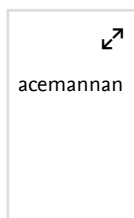
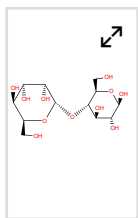
### SciVal Topic Prominence

Topic: (1-6)-alpha-glucomannan | Amorphophallus | Carboxymethyl Konjac Glucomannan

Prominence percentile: 93.050

### Chemistry database information

#### Substances



### Funding details

Funding sponsor	Funding number	Acronym
Universitas Diponegoro		UNDIP

#### Funding text

"This research was financially supported by the Faculty of Engineering, Universitas Diponegoro, Indonesia through Strategic Research Grant 2019".

Metrics View all metrics >



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

### Related documents

Simultaneous effect of temperature and time of deacetylation on physicochemical properties of glucomannan

Wardhani, D.H. , Nugroho, F. , Aryanti, N. (2018) *ASEAN Journal of Chemical Engineering*

Deacetylation of glucomannan of Amorphophallus oncophillus using NaOH and its properties as iron excipient by gelation in ethanol

Ulya, H.N. , Wardhani, D.H. , Aryanti, N. (2019) *AIP Conference Proceedings*

Gelation and structural characteristics of deacetylated salep glucomannan

Kurt, A. , Kahyaoglu, T. (2017) *Food Hydrocolloids*

View all related documents based on references

Find more related documents in Scopus based on:

Authors >

# Journal of King Saud University - Science

## Editor-in-Chief

**Prof. Omar M. Al-Dossary**  
Department of Physics and Astronomy  
College of Science  
King Saud University  
P.O. Box 2455, Riyadh 11451  
Tel.: 00966 -11-4676378 (secretary)  
Fax: 00966 11 4673656  
E-mail: omar@ksu.edu.sa

## Associate Editors

**Prof. Abdulllah M.S. Al-Amri**  
Geology and Geophysics Department  
College of Science  
King Saud University  
Saudi Arabia  
E-mail: amsamri@ksu.edu.sa

**Prof. Omar M. Al-Dossary**  
Physics and Astronomy Department  
College of Science  
King Saud University  
Saudi Arabia  
E-mail: Omar@ksu.edu.sa

**Prof. Ahmad H. Alghamdi**  
Chemistry Department  
College of Science  
King Saud University  
Saudi Arabia  
E-mail: ahghamdi@ksu.edu.sa

**Dr. Amal Abdulaziz Al-Hazzani**  
Botany and Microbiology Department  
College of Science, King Saud University  
Saudi Arabia  
E-mail: alhazzani@ksu.edu.sa

**Prof. Yousef A. Alkhamees**  
Mathematics Department, College of Science  
King Saud University  
Saudi Arabia  
E-mail: ykhomees@ksu.edu.sa

**Dr. Giovanni Benelli**  
Department of Agriculture, Food and  
Environment  
University of Pisa, Italy  
E-mail: g.benelli@sssup.it; benelli.giovanni  
@gmail.com

**Prof. Demosthenes Ellinas**  
School of Electronics and Computer  
Engineering  
Technical University of Crete  
Greece  
E-mail: ellinas@ece.tuc.gr

**Prof. Jun Ling**  
Department of Basic Sciences  
The Commonwealth Medical College,  
Scranton, USA  
E-mail: jling@tcmc.edu

**Prof. Hatem Odah**  
National Research Institute of Astronomy  
and Geophysics  
Cairo, Egypt  
E-mail: hatemodah@yahoo.com

**Prof. Hari M. Srivastava**  
Department of Mathematics and Statistics  
University of Victoria  
Canada  
E-mail: harimsri@math.uvic.ca

## International Advisory Editors

**Dr. Marilena Carbone**  
Universita degli Studi di Roma Tor Vergata,  
Roma, Italy

**Prof. Asantha Cooray**  
University of California, Irvine  
Department of Physics & Astronomy,  
4186 Frederick Reines Hall  
Irvine, CA 92697-4575  
Tel.: +1 949 824-6832

**Dr. G. Dyke**  
Department of Evolutionary Zoology, University of Debrecen,  
Debrecen, Egyetem ter 1., 4032, Hungary

**Rizwan Irshad**  
Ministry of Climate Change, G-5, Islamabad, Pakistan

**Prof. X.J. Yang**  
Department of Mathematics and Mechanics  
China University of Mining and Technology  
Xuzhou 221008, China

Volume 32 Issue 7  
ISSN 1018-3647  
October 2020



# Journal of King Saud University *-Science*

King Saud University



[Guide for Authors](#)[Menu](#)[Search in this journal](#)**Volume 32, Issue 7**

Pages 2901-3194 (October 2020)

[Download full issue](#)[← Previous vol/issue](#)[Next vol/issue >](#)

Receive an update when the latest issues in this journal are published

[Sign in to set up alerts](#)

Open access

Inside Front Cover - Editorial Board

Page IFC

[Download PDF](#)Research article *Open access*

Predictors of surgical outcome in thoracic spinal stenosis: Focusing on cerebrospinal fluid leakage

Lei Wang, Xiao Liu, Zhongjun Liu, Feng Wei, ... Xiaoguang Liu

Pages 2901-2904

[Download PDF](#) [Article preview](#) Research article *Open access*

Vanillic acid ameliorates hyperglycemia-induced oxidative stress and inflammation in streptozotocin-induced diabetic rats

Guoxin Ji, Rong Sun, Haiyan Hu, Fengsen Xu, ... Xiaoyan Chi

Menu

Search in this journal

Research article Open access

Correlational analyses between the production of anti-nuclear antibodies and biomarkers of acute aortic syndrome

Jian Shi, Yaping Guo, Jingyun Yang, Baoshen Wang, ... Jingbo Zhang

Pages 2920-2923

[Download PDF](#) Article preview 

Research article Open access

Vitamin C encapsulation by a gelation method using deacetylated glucomannan as a matrix

Dyah H. Wardhani, Hana N. Ulya, Fatoni Nugroho, Widayat, ... Amin Nugroho

Pages 2924-2930

[Download PDF](#)


Research article Open access

Adsorptive removal of Pb(II) ions from groundwater samples in Oman using carbonized *Phoenix dactylifera* seed

(Date stone)

Syed Najmul Hejaz Azmi, Muzna Al-Balushi, Fatima Al-Siyabi, Nouf Al-Hinai, Shadab Khurshid

Pages 2931-2938

[Download PDF](#) Article preview 

Research article Open access

Transportation of micro-polar fluid by dilating peristaltic waves

Sanjay Kumar Pandey, Subhash Chandra

Pages 2939-2949

[Download PDF](#) Article preview 

Research article Open access

Calibration under measurement errors

Gajendra K. Vishwakarma, Abhishek Singh, Neha Singh

Pages 2950-2961

[Download PDF](#) Article preview 

Research article Open access



Menu

Search in this journal

Research article *Open access*

## A study on predominance of keratinophilic flora in soil of Jaipur, India

Vishnu Sharma, Tarun Kumar Kumawat, Ruchi Seth, Anima Sharma, Subhash Chandra

Pages 2976-2981

[Download PDF](#) Article preview Research article *Open access*Pharmacological investigation of ribosome inactivating protein (RIP) – like protein extracted from *Annona squamosa* L. seeds

Sobiya Raj Dhanraj, J. Jannet Vennila, Muthu Dhanraj

Pages 2982-2988

[Download PDF](#) Article preview Research article *Open access*Heterosis and combining ability for grain Fe and Zn concentration and agronomic traits in sorghum [*Sorghum bicolor* (L.) Moench]

Anil Gaddameedi, Rahul M. Phuke, Kavi Kishor Bilhan Polavarapu, Sunita Gorthy, ... Ashok Kumar Are

Pages 2989-2994

[Download PDF](#) Article preview Research article *Open access*

## Theoretical modeling and experimental studies of Terebinth extracts as green corrosion inhibitor for iron in 3% NaCl medium

Mohammed Barbouchi, Bouchra Benzidia, Adnane Aouidate, Adib Ghaleb, ... M'barek Choukrad

Pages 2995-3004

[Download PDF](#) Article preview Research article *Open access*Heterologous WRKY and NAC transcription factors triggered resistance in *Nicotiana benthamiana*

Hafiz Muhammad Khalid Abbas, Aqeel Ahmad, Wubei Dong, Jingshu Xiang, ... Yu-Juan Zhong

Pages 3005-3013

Menu

Search in this journal

Research article *Open access*

## On Jakimovski-Leviatan-Păltănea approximating operators involving Boas-Buck-type polynomials

Khursheed J. Ansari, M.A. Salman, M. Mursaleen, A.H.H. Al-Abied


Pages 3018-3025

[Download PDF](#) Article preview Research article *Open access*

## Hyper-ovulation, endometriosis, and hyperplasia associated with tamoxifen exposure in Swiss albino mice

Iman Ali Al-Anazy, Badr Al-Dahmash, Doaa Mohamed El-Nagar, Khalid Elfaki Ibrahim, ... Muhammad Farooq Khan

Pages 3026-3031

[Download PDF](#) Article preview Research article *Open access*

## Excellent antimicrobial performance of co-doped magnetite double-layered ferrofluids fabricated from natural sand

Ahmad Taufiq, Rosy Eko Saputro, Defi Yuliantika, Sunaryono Sunaryono, ... Munasir Munasir

Pages 3032-3038

[Download PDF](#) Article preview Research article *Open access*Controlled magnetic behaviour of  $\text{Ni}_{80}\text{Fe}_{20}$  nanowire by a selection of nucleation pads

Alhanouf A. Alrwais, Hadi R. AlQahtani

Pages 3039-3044

[Download PDF](#) Article preview Research article *Open access*

## Protective effect of probiotic bacteria and its nanoformulation against cadmium-induced oxidative stress in male Wistar rat

Amenah Mohmmad Monadi Al-Enazi, Promy Virk, Awatif Hindi, Manal. A. Awad, ... Rabia Qindeel

Pages 3045-3051

[Download PDF](#) Article preview Research article *Open access*

Menu

Search in this journal

Pages 3059-3064

[Download PDF](#) Article preview 

Research article Open access

A novel approach to assess the heavy metal content in the feathers of shorebirds: A perspective of environmental research

Jeganathan Pandiyan, Shahid Mahboob, Rajendran Jagadheesan, Kuppusamy Elumalai, ... Marimuthu Govindarajan

Pages 3065-3071

[Download PDF](#) Article preview 

Research article Open access

Methanol extract of *Artemisia brevifolia* as a curative agent against CCl<sub>4</sub> induced nephrotoxicity in albino rats

Hira Ahsan, Muhammad Umar Ijaz, Asma Ashraf, Nazia Ehsan, ... Shahid Mahboob

Pages 3072-3078

[Download PDF](#) Article preview 

Research article Open access

Bisoprolol oral treatment of heart failure rats: Involvement of calmodulin

Xiaoyan Lv, Yuqin Gao, Yifan Zhang, Narendra Maddu, Zhanbin Feng

Pages 3079-3083


[Download PDF](#) Article preview 

Research article Open access

Metatranscriptomic analysis reveals co-expression pattern of mitochondrial oxidative phosphorylation (OXPHOS) genes among different species of bony fishes in muscle tissue

Geng-Ming Lin, Gilbert Audira, Stevhen Juniardi, Chung-Der Hsiao

Pages 3084-3090

[Download PDF](#) Article preview 

Research article Open access

In vitro evaluation of antifungal activity of some agricultural fungicides against two saprolegnoid fungi infecting cultured fish

Menu

Search in this journal

Research article *Open access***Synthesis and photocatalytic performance of Ag-TiVOX nanocomposite**


Mahubedu Khutso Ntobeng, Patrick Ehi Imoisili, Ten-Chien Jen

Pages 3103-3110

[Download PDF](#) Article preview Research article *Open access***A study of insect succession of forensic importance: Dipteran flies (diptera) in two different habitats of small rodents in Riyadh City, Saudi Arabia**


Fahd A. Al-Mekhlafi, Reem A. Alajmi, Zainab Almusawi, Fahd Mohammed Abd Al GALil, ... Mohammed S. Al-Khalifa

Pages 3111-3118

[Download PDF](#) Article preview Research article *Open access***Gaussian models for anthropogenic CO<sub>2</sub> emissions consistent with prescribed climate targets**

Nizar Jaoua, Wadii Hajji

Pages 3119-3124

[Download PDF](#) Article preview Research article *Open access***Pristine and palladium-doped perovskite bismuth ferrites and their nitrogen dioxide gas sensor studies**

Shivaji D. Waghmare, Siddheshwar D. Raut, Balaji G. Ghule, Vijaykumar V. Jadhav, ... Rajaram S. Mane

Pages 3125-3130

[Download PDF](#) Article preview Research article *Open access***Spectroscopic features of PHOTOGEM® in human Rhabdomyosarcoma (RD) cellular model**

Muhammad Fakhar-e-Alam, Muhammad Aseer, Muhammad Suleman Rana, Muhammad Hammad Aziz, ... W.A. Farooq

Pages 3131-3137

[Download PDF](#) Article preview Research article *Open access*

Menu

Search in this journal

Pages 3145-3152

[Download PDF](#) Article preview 

Research article Open access

A simple, rapid, expedient and sustainable green strategy for the synthesis of benz-/naphthimidazoles

Abdulrahman I. Almansour, Raju Suresh Kumar, Natarajan Arumugam

Pages 3153-3158

[Download PDF](#) Article preview 

Research article Open access

Biological, molecular and pharmacological characteristics of chloroquine, hydroxychloroquine, convalescent plasma, and remdesivir for COVID-19 pandemic: A comparative analysis

Sultan Ayoub Meo, Syed Ziauddin A. Zaidi, Trisha Shang, Jennifer Y. Zhang, ... David C. Klonoff

Pages 3159-3166

[Download PDF](#) Article preview 

Research article Open access

First reports of associations between spectral properties, chlorophyll, bacterial and zooplankton in two Chilean north Patagonian lakes (Villarrica and Caburgua, 38° S, Araucania region, Chile)

Patricio De los Rios-Escalante, Angel Contreras, Gladys Lara, Mirtha Latsague, Carlos Esse

Pages 3167-3173

[Download PDF](#) Article preview 

Research article Open access

Enhanced production, purification and biochemical characterization of therapeutic potential fibrinolytic enzyme from a new *Bacillus flexus* from marine environment

Dunia A. Al Farraj, T. Sujin Jeba Kumar, Ponnuswamy Vijayaraghavan, Mohamed Soliman Elshikh, ... Maryam K. Alshammari

Pages 3174-3180

[Download PDF](#) Article preview 

Research article Open access

# Journal of King Saud University - Science

Open access

[Guide for Authors](#)

Menu

Search in this journal

Pages 3187-3194

[Download PDF](#)   [Article preview](#) ▾

[< Previous vol/issue](#)

[Next vol/issue >](#)

ISSN: 1018-3647

Copyright © 2020 King Saud University. Production and hosting by Elsevier B.V. All rights reserved



Copyright © 2020 Elsevier B.V. or its licensors or contributors.  
ScienceDirect® is a registered trademark of Elsevier B.V.





## Original article

## Vanillic acid ameliorates hyperglycemia-induced oxidative stress and inflammation in streptozotocin-induced diabetic rats

Guoxin Ji<sup>a</sup>, Rong Sun<sup>a</sup>, Haiyan Hu<sup>a</sup>, Fengsen Xu<sup>a</sup>, Xinjuan Yu<sup>b</sup>, Vishnu Priya Veeraraghavan<sup>c</sup>, Surapaneni Krishna Mohan<sup>d</sup>, Xiaoyan Chi<sup>a,\*</sup><sup>a</sup> Department of Obstetrics, Qingdao Municipal Hospital, School of Medicine, Qingdao University, No.1, Jiaozhou Road, Qingdao, Shandong 266011, China<sup>b</sup> Central Laboratory, Qingdao Municipal Hospital, No. 5, Donghai Middle Road, Qingdao, Shandong 266071, China<sup>c</sup> Department of Biochemistry, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 600 077, India<sup>d</sup> Department of Biochemistry, Panimalar Medical College Hospital & Research Institute, Varadharajapuram, Poonamallee, Chennai 600 123, India

## ARTICLE INFO

## Article history:

Received 10 March 2020

Revised 2 April 2020

Accepted 12 April 2020

Available online 20 April 2020

## Keywords:

Vanillic acid  
Inflammation  
Diabetes mellitus  
Hyperglycemia  
Antioxidants

## ABSTRACT

**Objective:** Diabetes mellitus (DM) is a metabolic illness and it is a result of hyperglycemia ensuing since a deficiency in insulin production, insulin function. Based on WHO statistics, more than 347 million peoples are suffered from the DM globally and it may increase to 694 million in 2030. Vanillic acid (VA) is a phenolic derived compound from dietary vegetations and fruits with the many biological activities. This current research was planned to investigate the antidiabetic and anti-inflammatory potential of VA on streptozotocin-challenged DM in rats.

**Methods:** Later than an overnight fast, the rats were induced diabetes via one intraperitoneal treatment of STZ (40 mg/kg b.wt) in a newly organized 0.1 M citrate buffer. We analyzed body weight, plasma glucose, liver marker enzymes, insulin, carbohydrate metabolic enzymes, glycosylated hemoglobin, protein profiles, oxidant/antioxidant levels, inflammatory mediators and also evaluate histopathology of pancreatic tissues in normal control and investigational animals.

**Results:** Diabetic animals were revealed an increased in HbA1c, blood glucose, food and fluid intake and relative weight of kidney and liver, whereas the reduced level of insulin and body weight. Furthermore, augmented levels of ALT, glucose-6-phosphatase, AST, TBARS, TNF- $\alpha$ , creatinine, LOOH, fructose 1,6-bisphosphatase, ALP, IL-6 and IL-1 $\beta$  whereas, reduced status of antioxidant enzymes were observed in diabetic rats. Histopathological analysis of pancreatic tissues was in support of the biochemical parameters.

**Conclusions:** Diabetic rats treated by VA significantly alter all these parameters toward normal levels. These results recommended that the VA is a potential antidiabetic and anti-inflammatory effect for the cure of DM.

© 2020 The Authors. Published by Elsevier B.V. on behalf of King Saud University. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

As highly developed medical technology and better living standards broaden the expectation of human beings, chronic illness has become the most important risk to the healthiness of people (Megari, 2013). Diabetes mellitus (DM) is a cluster of metabolic

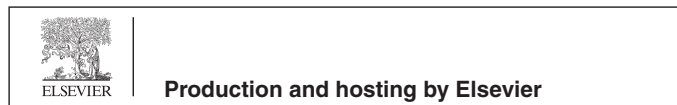
illness, which described as a result of hyperglycemia ensuing from a deficiency in the production and function of insulin. The continual hyperglycemia of DM is related to the extensive time of injury, failure, and dysregulation of numerous organs, principally the nerves, kidneys, blood vessels, heart, and eyes. The symptoms of noticeable hyperglycemia contains weight loss, polydipsia, polyuria, occasionally with blurred vision and polyphagia (American Diabetes Association, 2002). The WHO has been informed that more than 347 million populace suffered due to the DM globally and expected this number would twofold (694 million) by 2030 (Cho et al., 2018).

Oxidative stress forms a metabolic system of damage in various kinds of vascular illnesses. The hyperglycemia enhances oxidative stress during the greatest formation of ROS has been informed

\* Corresponding author.

E-mail address: [chixiaoyan2018@sina.com](mailto:chixiaoyan2018@sina.com) (X. Chi).

Peer review under responsibility of King Saud University.





## Original article

## Transportation of micro-polar fluid by dilating peristaltic waves

Sanjay Kumar Pandey\*, Subhash Chandra

Department of Mathematical Sciences, Indian Institute of Technology (BHU), Varanasi 221005, India

## ARTICLE INFO

## Article history:

Received 2 January 2019

Revised 15 July 2020

Accepted 21 July 2020

Available online 7 August 2020

## Keywords:

Peristalsis

Oesophagus

Micro-polar fluid

Wave dilation parameter

Coupling number

Micro-polar parameter

## ABSTRACT

In this paper, we analytically investigate axi-symmetric flow of a micro-polar fluid induced by peristaltic waves with progressively dilating amplitude. By means of mathematical formulation we examine its impact on swallowing of single food bolus through oesophagus. Liquid crystals, blood, some edible solutions resemble micro-polar property. Engineering applications using polymer solutions, colloidal solutions, drilling fluids in oil industries etc. may be better understood by this investigation. Long wavelength and low Reynolds number approximations are employed to get rid of non-linear convective terms and minimise curvature effects of the wall. It is inferred that increasing coupling number and amplitude dilation parameter enhance the pressure inside the tube, while micro-polar parameter is responsible for reducing the pressure along the axis of the tube. Local wall shear stress too increases with amplitude dilation parameter. The study suggests that achalasia patients should avoid the consumption of micro-polar fluids. It is also concluded that reflux action weakens with dilation of wave amplitude for micro-polar flows.

© 2020 Indian Institute of Technology (BHU), Varanasi, India. Published by Elsevier B.V. on behalf of King Saud University. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Combination of periodically alternating contractions and relaxations of muscles responsible for most of the physiological flows is peristalsis. This combination forms a transverse and progressive wave. This mechanism has several engineering applications. Several innovators, across various fields, are developing peristaltic machines that can move in cylindrical tubes to locate ruptures at the joints of gas and water pipelines and those caused by cracks. Many such machines are being designed to serve industries for sanitary fluid transport, blood pumps in heart/lung machines, transport of corrosive fluids without contacting machinery components. Studies are also focused on realization of machines that can pass through intestines and blood vessels. Peristalsis, observed in earthworms and nematodes, induces shape variation and a shift in the center of gravity. This causes extensional waves to propagate and thus progress without injury to the vulnerable inner walls of

blood vessels. This moving mechanism together with catheters can reach a diseased site by itself (Nakazato et al., 2010).

Eringen (1966) formulated the effects of individual particles such as micro-rotation in flow, which are concentrated suspension of non-deformable neutrally buoyant rigid particles in a viscous medium. Micro polar fluids contain micro constituents which can undergo rotation. Rotation of micro constituents can affect the hydrodynamics of flow and make the fluid distinctly non-Newtonian. Physically, micro polar fluids represent fluids consisting of rigid, spherical or randomly oriented particles with ignored deformation suspended in a viscous medium (Lukaszewicz, 1999). Liquid crystals, blood, some edible solutions resemble micro-polar property. Engineering applications using polymer solutions, colloidal solutions, drilling fluids in oil industries etc. may be better understood by this investigation (Pandey and Tripathi, 2011a).

Devi and Devanathan (1975) studied peristaltic transport of micro-polar fluids in a cylindrical tube with a sinusoidal wave of small amplitude. Philip and Chandra (1995) explored peristaltic transport of a simple micro-polar fluid which accounts for micro-rotation and micro-stretching of the particles contained in a small volume element using long wave length approximations. Srinivasacharaya et al. (2003) examined different micro-polar properties on pressure across one wavelength and also on trapping; Hayat et al. (2007) investigated the effects of different wave forms; Muthu et al. (2005, 2008a, b) studied wall properties in channels and tubes respectively whereas Hayat and Ali (2008)

\* Corresponding author.

E-mail addresses: [skpandey.apm@itbhu.ac.in](mailto:skpandey.apm@itbhu.ac.in) (S.K. Pandey), [schandra.ibs86@gmail.com](mailto:schandra.ibs86@gmail.com) (S. Chandra).

Peer review under responsibility of King Saud University.



Production and hosting by Elsevier





## Original article

Adsorptive removal of Pb(II) ions from groundwater samples in Oman using carbonized *Phoenix dactylifera* seed (Date stone)Syed Najmul Hejaz Azmi<sup>a,\*</sup>, Muzna Al-Balushi<sup>a</sup>, Fatima Al-Siyabi<sup>a</sup>, Nouf Al-Hinai<sup>a</sup>, Shadab Khurshid<sup>b</sup><sup>a</sup> Applied Chemistry Section, Applied Sciences Department, Higher College of Technology, Muscat, P.O. Box 74, Al-Khuwair 133, Oman<sup>b</sup> Interdisciplinary Department of Remote Sensing and GIS Applications, Aligarh Muslim University, Aligarh 202001, U.P., India

## ARTICLE INFO

## Article history:

Received 16 August 2019

Revised 20 July 2020

Accepted 23 July 2020

Available online 4 August 2020

## Keywords:

Pb(II) ions

Carbonized date stone

Adsorption isotherms

Ground water samples

## ABSTRACT

**Objective:** In the present work, the potential use of raw date stone as an inexpensive carbonized adsorbent material for removal of Pb(II) has been demonstrated.**Methods:** The adsorption of Pb(II) ions onto carbonized date stone has been studied by batch adsorption method. The variables (pH, adsorbent dose and initial concentration of Pb(II) ions) of the adsorption process were optimized by response surface methodology via Box-Behnken design (BBD).**Results:** The optimum values of pH, adsorbent dose and initial concentration were 5.0, 0.3 g and 5.0 mg L<sup>-1</sup>, respectively to achieve 88.50% removal efficiency. The adsorption data fitted well to both Langmuir and Freundlich isotherm models with coefficient of correlation (r) >0.9999. The maximum adsorption capacity of the described adsorbent material for Pb<sup>2+</sup> ions with Langmuir model was found to be 9.03 mg g<sup>-1</sup>. Kinetic data obtained at different concentrations have been analysed using pseudo-first-order and pseudo-second-order kinetic models. The experimental data obeyed pseudo-second-order kinetic model. Gibb's free energy change ( $\Delta G^\circ$ ) was evaluated and resulted with  $-17.91$  kJ mol<sup>-1</sup> at 298 K, hence indicated favourable adsorption process.**Conclusion:** Neghal carbonized date stone was found to be a promising natural adsorbent for removal of Pb(II).© 2020 The Author(s). Published by Elsevier B.V. on behalf of King Saud University. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

The water contaminated with heavy metals is unsafe for drinking purposes because of their toxicity (World Health Organization, 2011; Azmi et al., 2013). The region around Muscat, Oman, is rich in metallic deposits which are associated with the ophiolite rocks such as basalt that contains Fe, Ca, Na, Mg, Cu, Au, Ag and Pb. In addition, Oman copper is generally associated with high amounts of lead. The reason of high concentration of Pb(II) in selected water sources may be due to leaching from the rocks (Yaghi, 2007; Al-Raisi et al., 2014). Lead enters the human body through air, water, soil, food and dust (Schroeder and Tipton, 1968). Lead even at extremely low concentrations causes brain damage in kids (World Health Organization, 2011), anemia (Moore, 1988) and

reproductive effects (Wildt et al., 1983). World Health Organization (World Health Organization, 2011) and Directorate General for specifications and measurements, Oman (OS, 2012) have set a permissible limit of 0.01 mg L<sup>-1</sup> Pb(II) for un-bottled drinking water. Lead is sometimes released during metallurgical processes and contaminate water bodies (Mishra and Patel, 2009). Due to strict environmental protection legislation concerning public health, several treatment methods such as electrochemical treatment (Thien-Khanh et al., 2017), ion exchange (Azarudeen et al., 2015), chemical precipitation (Wang et al., 2017) and adsorption (Gupta et al., 2004; Rahman and Haseen, 2014; Rahman et al., 2020) have been used for the remediation of heavy metals from water.

Bio-sorption is a very promising field utilizing natural biological materials such as rice straw (Amer et al., 2017), eggshell (Soares et al., 2016), jatoba (Isis et al., 2017), black walnut (Lawal et al., 2017), chitosan and sodium citrate (Pu et al., 2017) for remediation of Pb(II) from water. Peanut shell-based biochar was investigated for adsorption of Pb(II) ions (Tasar and Ozer, 2020). Activated carbon prepared from *Albizia lebeck* and *Melia azedarach* seeds were applied for adsorptive removal of Pb(II) from wastewater (Ullah et al., 2020). The potential of activated carbon derived from *Repto-*

\* Corresponding author.

Peer review under responsibility of King Saud University.



Production and hosting by Elsevier